

REMARKS

The present application was filed on June 6, 2002 with claims 1-27. With the present response, Applicants propose to amend independent claims 1, 12, and 16.

In the outstanding Office Action, the Examiner (1) objected to independent claim 12; (2) rejected claims 1-10, 12-14, 16-18, 20-22, and 24-26 under 35 U.S.C. §102(b) as being anticipated by Moslemie et al., WO98/57509; and rejected claims 11, 15, 19, 23, and 27 under 35 U.S.C. §103(a) as being unpatentable over Moslemie in view of Jarvinen et al., U.S. Patent No. 5,960,389.

With regard to the objection in item (1) above, in the outstanding Office Action, the Examiner objected to claim 12 because of an asserted insufficient antecedent basis for the limitation of "the mobile station" in line 4 of the claim. Applicant has amended independent claim 12 to change the term "the mobile station" to --a mobile station--. Applicant respectfully requests the objection to claim 12 be withdrawn.

Regarding the rejections in item (2) above, Applicant respectfully traverses these rejections. Applicant has performed clarifying amendments to independent claims 1, 12, and 16, as supported, for instance, by page 13, line 30 to page 14, line 10 and page 15, lines 24-34. Applicants respectfully submit that Moslemie does not disclose the unique features in claims 1-10, 12-14, 16-18, 20-22, and 24-26, and in particular in independent claims 1, 12, 16, 20, and 24.

Regarding independent claim 1, Applicant has performed a clarifying amendment to clarify that the step of determining is performed in response to signalling that one of the mobile station or the network is temporarily ceasing transmission of frames. In particular, amended claim 1 contains the features of (1-a) signalling, between a mobile station to a network, that one of the mobile station or the network is temporarily ceasing transmission of frames; (1-b) at the network and in response to the signalling that one of the mobile station or the network is temporarily ceasing transmission of frames, determining if a current traffic

channel that is assigned to the mobile station can be retained by the mobile station, or whether the current traffic channel must be released by the mobile station; and (1-c) if it is determined that the current traffic channel must be released by the mobile station, signalling from the network to the mobile station to release the channel.

Thus, when a temporary cessation in transmission of frames is to occur, certain steps are taken in response to the cessation to determine whether a mobile station will retain an assigned traffic channel and to signal the mobile station to release the assigned traffic channel when the traffic channel must be released by the mobile station.

In the following argument, the text generally of determining if a current traffic channel that is assigned to the mobile station can be retained by the mobile station, or whether the current traffic channel must be released by the mobile station in features of the claims will be called the “determination operation” herein.

Applicant reads Moslemie as disclosing the following (Moslemie at col. 6, lines 9-17):

[A]ny pauses and moments when less transmission capacity is needed in a information stream (voice or data signal) of a circuit-switched call, i.e. when the call is in a discontinuous transmission state (DTX), are used for transmitting packet-mode information from the base station on the same downlink traffic channel. When the circuit-switched call switches to a DTX state (transmission of information is interrupted), data packets of a packet-mode call (calls) are transmitted on the traffic channel allocated for the circuit-switched call, until the discontinuous transmission state ends.”

In other words, in Moslemie, the downlink traffic channel for a circuit-switched call is allocated for a separate packet-mode data transmission when the downlink portion of a circuit-switched call is in a DTX state. The allocation is a GPRS allocation (see Moslemie at page 14, lines 18-22).

More specifically, Moslemie discloses that a silence descriptor (SID) frame is used to determine when GPRS allocation is made, as described below (see page 14, lines 7-17 of Moslemie):

When the frame received from line 34 is a SID frame in block 31, the channel controller 31 switches to a downlink DTX state in block 41. Upon switching to the DTX state, the channel controller still sends the first SID frame to the radio unit 30. After this the channel controller 31 sets (activates) the DTX_DETECTED line of the traffic channel concerned, as is illustrated in fig. 6.

Until now the radio unit 30 has sent GSM information, i.e. three speech frames and one SID frame, on traffic channel ch4 [to the mobile station], since the DTX_DETECTED line corresponding to the traffic channel has been reset. When the DTX_DETECTED line is set, the radio unit 30 starts to send GPRS information received from line 33 on traffic channel ch4.

Even if setting of the DTX_DETECTED line in Moslemie can be considered to disclose feature (1-a) above, Moslemie does not disclose that either the determination operation of feature (1-b) or feature (1-c) is performed in response to feature (1-a). For instance, Moslemie specifically states in the cited text above that the radio unit 30 simply starts to send GPRS information (to a mobile station supporting GPRS -- not the mobile station supporting GSM) when the DTX_DETECTED line is set. There is no disclosure or implication in Moslemie that, in response to the DTX_DETECTED being set (for instance), any determination is made whether a current traffic channel that is assigned to the mobile station can be retained by or must be released by the mobile station (e.g., the determination operation of feature (1-b) of independent claim 1) or signalling from to the network to the mobile station to release the channel if it is determined that the current traffic channel must be released (e.g., feature (1-c) of independent claim 1).

The Examiner asserts that block 56 of FIG. 5 of Moslemie discloses the determination operation of feature (1-b) and feature (1-c) of independent claim 1. Block 56 of Moslemie states the following: "Release allocation of GSM traffic channel as GPRS PDTCH channel. Stop supplying GPRS radio blocks to radio unit 30." There is no disclosure in block 56 of Moslemie of features (1-b) or (1-c) of independent claim 1.

Moslemie does state that allocation of the GPRS traffic channel could last for one DTX state or for several DTX states by the mobile station having GPRS functionality. See Moslemie at page 15, lines 28-36. Nonetheless, there is no disclosure Moslemie that any determination is made whether a current traffic channel that is assigned to the mobile station can be retained by or must be released by the mobile station (e.g., the determination operation in feature (1-b) of independent claim 1) or signalling from to the network to the mobile station to release the channel if it is determined that the current traffic channel must be released (feature (1-c) of independent claim 1).

Moreover, block 56 in Moslemie is performed in response to block 55 being "No," which means that DTX_DETECTED is reset and speech frames are again sent to the GSM mobile station. Page 15, lines 16-27 of Moslemie. In other words, block 56 of Moslemie is performed in response to speech frames being sent to the GSM mobile station. In independent claim 1, the determining operation of feature (1-b) is performed in response to the opposite situation -- which is that frames have temporarily ceased being transmitted. Thus, even if block 56 of Moslemie were construed to disclose the determining operation of feature (1-b) and feature (1-c) of independent claim 1 (which Applicant respectfully submits are not disclosed by Moslemie), then the combination of features (1-a), (1-b), and (1-c) of independent claim 1 are not taught by Moslemie, and in fact Moslemie teaches away from these features.

Because the combination of features (1-a), (1-b), and (1-c) and at least features (1-b) and (1-c) of independent claim 1 are not disclosed or implied by Moslemie, Applicant respectfully submits that independent claim 1 is patentable over Moslemie. Because independent claim 1 is patentable over Moslemie, dependent claims 2-10 are also patentable over Moslemie. Applicant respectfully requests that the §102(b) rejection to claims 1-10 be withdrawn.

Regarding independent claim 12, Applicant has performed a clarifying amendment to claim 12 that is similar to the clarifying amendment performed on independent claim 1. Consequently, amended independent claim 12 comprises (emphasis added) the

features of (12-a) detecting, in a mobile station, a cessation of user speech; (12-b) in response, signalling from the mobile station to a network that the mobile station is entering a Discontinuous Transmission state; (12-c) at the network and in response to the signalling that the mobile station is entering the Discontinuous Transmission state, based at least on a consideration of a current network requirement for uplink voice traffic channels, determining if a current uplink voice traffic channel that is assigned to the mobile station can be retained by the mobile station, or whether the current uplink voice traffic channel must be released by the mobile station; and (12-d) only if it is determined that the current uplink voice traffic channel must be released by the mobile station, sending a channel release message from the network to the mobile station.

First, it should be noted that at least features (12-c) and (12-d) of independent claim 12 specifically concern the uplink direction for voice traffic. By contrast, Moslemie specifically states that “[t]he method of the invention allows much more effective use of radio network capacity in the downlink direction.” See page 7, lines 14-15 of Moslemie. There is no disclosure or implication in Moslemie that Moslemie’s invention can be used in the uplink direction.

Second, even if Moslemie’s invention can be used in the uplink direction (which Applicants submit is not disclosed in Moslemie), there is no disclosure in Moslemie of the determination operation of feature (12-c) or feature (12-d) of independent claim 12. The arguments given above with respect to features (1-b) and (1-c) of independent claim 1 are equally valid with respect to features (12-c) and (12-d) of independent claim 12. Additionally, the determination operation of feature (12-c) is performed in response to a situation where user speech has ceased, which is opposite to what is performed in blocks 55 and 56 disclosed by Moslemie (e.g., in response to user speech starting -- block 55 -- block 56 is performed). Thus, even if block 56 of Moslemie were construed to disclose the determining operation of feature (12-c) and feature (12-d) of independent claim 12 (which Applicant respectfully submits are not disclosed by Moslemie), then the combination of

features (12-a), (12-b), (12-c) and (12-d) of independent claim 12 are not taught by Moslemie, and in fact Moslemie teaches away from these features.

Therefore, Applicant respectfully submits that independent claim 12 is patentable over Moslemie. Because independent claim 12 is patentable, dependent claims 13 and 14 are also patentable, and Applicant requests the §102(b) rejection to claims 12-14 be withdrawn.

With regard to independent claim 16, Applicant has performed a clarifying amendment to the following feature (emphasis added): at the network and in response to the signalling that the mobile station is entering the Discontinuous Transmission state, based at least on a consideration of a current network requirement for uplink voice traffic channels, determining if a current uplink voice traffic channel that is assigned to the mobile station can be retained by the mobile station, or whether the current uplink voice traffic channel must be released by the mobile station.

Amended independent claim 16 comprises features of (16-a) detecting, in a component of the network, a cessation of speech; (16-b) in response, signalling from the mobile station to a network that the mobile station is entering a Discontinuous Transmission state; (16-c) at the network and in response to the signalling that the mobile station is entering the Discontinuous Transmission state, based at least on a consideration of a current network requirement for uplink voice traffic channels, determining if a current uplink voice traffic channel that is assigned to the mobile station can be retained by the mobile station, or whether the current uplink voice traffic channel must be released by the mobile station; and (16-d) only if it is determined that the current uplink voice traffic channel must be released by the mobile station, sending a channel release message from the network to the mobile station.

Applicant respectfully submits that there is no disclosure in Moslemie of the determination operation of feature (16-c) and feature (16-d) of independent claim 12. The arguments given above with respect to features (1-b) and (1-c) of independent claim 1 are equally valid with respect to features (16-c) and (16-d) of independent claim 16.

Additionally, the determination operation of feature (16-c) is performed in response to a situation where user speech has ceased, which is opposite to what is performed in blocks 55 and 56 disclosed by Moslemie (e.g., in response to user speech starting -- block 55 -- block 56 is performed). Thus, even if block 56 of Moslemie were construed to disclose the determining operation of feature (16-c) and feature (16-d) of independent claim 16 (which Applicant respectfully submits are not disclosed by Moslemie), then the combination of features (16-a), (16-b), (16-c) and (16-d) of independent claim 16 are not taught by Moslemie, and in fact Moslemie teaches away from these features.

Therefore, Applicant respectfully submits that independent claim 16 is patentable over Moslemie. Because independent claim 16 is patentable, dependent claims 17 and 18 are also patentable, and Applicant requests the §102(b) rejection to claims 16-18 be withdrawn.

With regard to independent claim 20, this claim has features similar to the features in independent claim 12. Therefore, the arguments with respect to independent claim 12 are applicable to independent claim 20. In particular, certain features of independent claim 20 specifically concern the uplink direction for voice traffic. By contrast, there is no disclosure or implication in Moslemie that Moslemie's invention can be used in the uplink direction. Additionally, even if Moslemie's invention can be used in the uplink direction (which Applicants submit is not disclosed in Moslemie), there is no disclosure in Moslemie of the features of the channel allocation unit and the wireless network transmitter of independent claim 20 (e.g., having features similar to the determination operation of feature (12-c) and feature (12-d) of independent claim 12, respectively). The arguments given above with respect to the determination operation of feature (12-c) and feature (12-d) of independent claim 12 are equally valid with respect to the channel allocation unit and the wireless network transmitter of independent claim 20. Additionally, the channel allocation unit of independent claim 20 is responsive to a message that a mobile station is entering a Discontinuous Transmission state (e.g., which occurs when a cessation of user speech occurs), which is opposite to what is performed in blocks 55 and 56 disclosed by Moslemie

(e.g., in response to user speech starting -- block 55 -- block 56 is performed). Thus, even if block 56 of Moslemie were construed to disclose the determining operation of the channel allocation unit and the operations performed by the wireless network transmitter of independent claim 20 (which Applicant respectfully submits are not disclosed by Moslemie), then the combination of features of independent claim 20 are not taught by Moslemie, and in fact Moslemie teaches away from these features.

Applicant respectfully submits that independent claim 20 is patentable over Moslemie. Because independent claim 20 is patentable, its dependent claims 21 and 22 are also patentable. Applicant respectfully requests the §102(b) rejection to claims 20-22 be withdrawn.

With regard to independent claim 24, this claim has features similar to the features in independent claim 16. Therefore, the arguments with respect to independent claim 16 are applicable to independent claim 24. In particular, there is no disclosure in Moslemie of the features in the channel allocation unit or of the wireless network transmitter (e.g., having features similar to the determination operation of feature (16-c) and feature (16-d) of independent claim 16, respectively). The arguments given above with respect to the determination operation of feature (16-c) and the feature (16-d) of independent claim 16 are equally valid with respect to the channel allocation unit and the wireless network transmitter of independent claim 24. Additionally, the channel allocation unit of independent claim 24 is responsive to a message that a wireless network is entering a Discontinuous Transmission state (e.g., which occurs when a cessation of user speech occurs), which is opposite to what is performed in blocks 55 and 56 disclosed by Moslemie (e.g., in response to user speech starting -- block 55 -- block 56 is performed). Thus, even if block 56 of Moslemie were construed to disclose the determining operation of the channel allocation unit and the operations performed by the wireless network transmitter of independent claim 24 (which Applicant respectfully submits are not disclosed by Moslemie), then the combination of features of independent claim 24 are not taught by Moslemie, and in fact Moslemie teaches away from these features.

Applicant respectfully submits that independent claim 24 is patentable over Moslemie. Because independent claim 24 is patentable, its dependent claims 25 and 26 are also patentable. Applicant respectfully requests the §102(b) rejection to claims 24-26 be withdrawn.

With respect to the §102(b) rejection by the Examiner of dependent claims 5, 13, 17, 21, and 25, the Examiner asserts that Moslemie fails to teach the features of “at some future time, determining that at least one new frame is required to be transmitted” and “transmitting the at least one new frame on said current traffic channel that is assigned to the mobile station.” Nonetheless, the Examiner asserts that it is inherently understood that a new/reused frame is required for transmission and that the channel is assigned to the mobile station. Applicant respectfully disagrees.

An exemplary benefit of Applicant’s invention is that there should be little or no loss of voice data due to signalling and that comfort noise may be retained and transmitted over frames because the mobile station retains, at certain times, the channel and is allowed to transmit new frames. See, e.g., page 6, line 23 to page 7, line 15 of Applicant’s specification. Applicant submits that Moslemie would likely have the same problem of too much signalling as described in Applicant’s Background (see page 3, line 31 to page 4, line 2 of Applicant’s specification) and/or the problem that comfort noise would not be transmitted (see page 4, line 4 to page 5, line 11 of Applicant’s specification). In fact, Moslemie and other references (see, e.g., Applicant’s Background section) teach away from the present invention by using too much signalling and/or periods when comfort noise should be transmitted for purposes other than transmitting comfort noise.

Therefore, Applicant respectfully submits that it is not inherently understood that a new/reused frame is required for transmission, as asserted by the Examiner, because Moslemie and other references teach away from retaining a traffic channel and sending new frames on the retained traffic channel.


Consequently, the §102(b) rejections to claims 5, 13, 17, 21, and 25 should be withdrawn for these additional reasons.

Regarding the §103(a) rejection of dependent claims 11, 15, 19, 23, and 27, these claims depend from independent claims 1, 12, 16, 20, and 24, respectively. Therefore, Applicant respectfully submits that dependent claims 11, 15, 19, 23, and 27 are patentable for at least the arguments given above with respect to their independent claims and respectfully request the §103(a) rejection of claims 11, 15, 19, 23, and 27 be withdrawn.

Based on the foregoing arguments, it should be clear that claims 1-27 are thus allowable over the prior art cited by the Examiner, and the Examiner is respectfully requested to reconsider and remove the rejections.

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